FIG 1

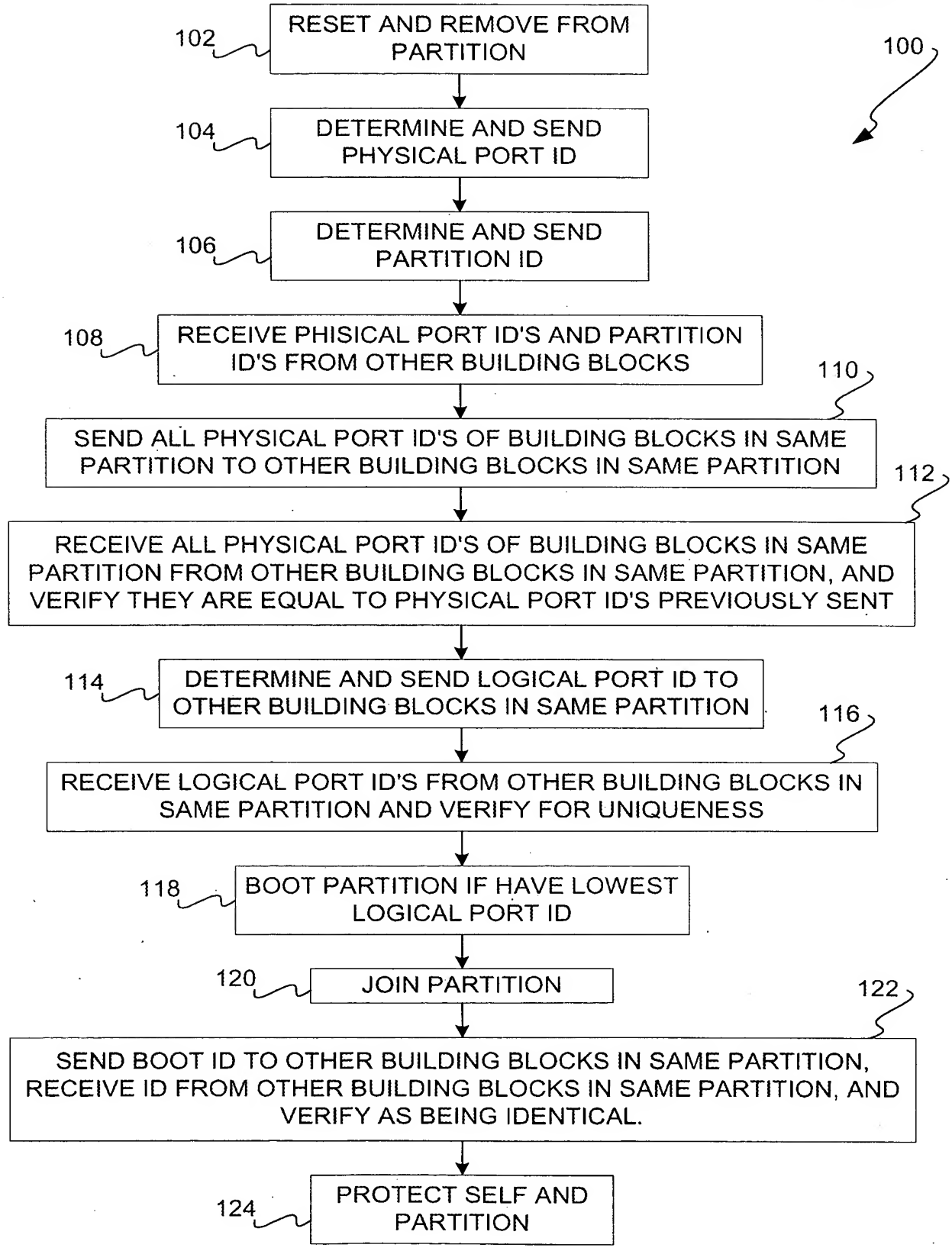

100
102
RESET AND REMOVE FROM PARTITION
104
DETERMINE AND SEND PHYSICAL PORT ID
106
DETERMINE AND SEND PARTITION ID
108
RECEIVE PHISICAL PORT ID'S AND PARTITION ID'S FROM OTHER BUILDING BLOCKS
110
SEND ALL PHYSICAL PORT ID'S OF BUILDING BLOCKS IN SAME PARTITION TO OTHER BUILDING BLOCKS IN SAME PARTITION
112
RECEIVE ALL PHYSICAL PORT ID'S OF BUILDING BLOCKS IN SAME PARTITION FROM OTHER BUILDING BLOCKS IN SAME PARTITION, AND VERIFY THEY ARE EQUAL TO PHYSICAL PORT ID'S PREVIOUSLY SENT
114
DETERMINE AND SEND LOGICAL PORT ID TO OTHER BUILDING BLOCKS IN SAME PARTITION
116
RECEIVE LOGICAL PORT ID'S FROM OTHER BUILDING BLOCKS IN SAME PARTITION AND VERIFY FOR UNIQUENESS
118
BOOT PARTITION IF HAVE LOWEST LOGICAL PORT ID
120
JOIN PARTITION
122
SEND BOOT ID TO OTHER BUILDING BLOCKS IN SAME PARTITION, RECEIVE ID FROM OTHER BUILDING BLOCKS IN SAME PARTITION, AND VERIFY AS BEING IDENTICAL.
124
PROTECT SELF AND PARTITION

FIG 2

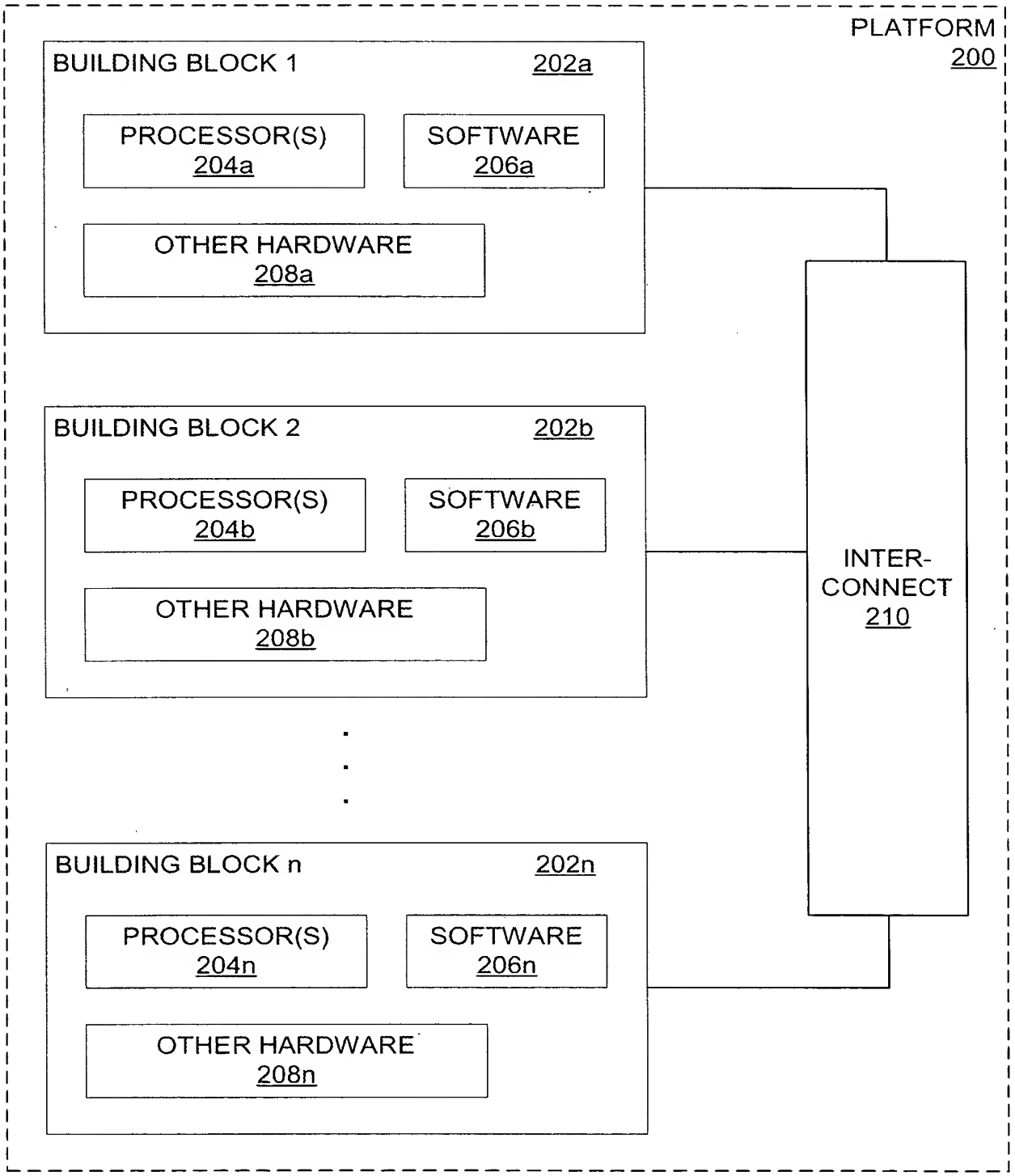

PLATFORM
200
BUILDING BLOCK 1
202a
PROCESSOR(S)
204a
SOFTWARE
206a
OTHER HARDWARE
208a
BUILDING BLOCK 2
202b
PROCESSOR(S)
204b
SOFTWARE
206b
OTHER HARDWARE
208b
BUILDING BLOCK n
202n
PROCESSOR(S)
204n
SOFTWARE
206n
OTHER HARDWARE
208n
INTER-
CONNECT
210

FIG 3

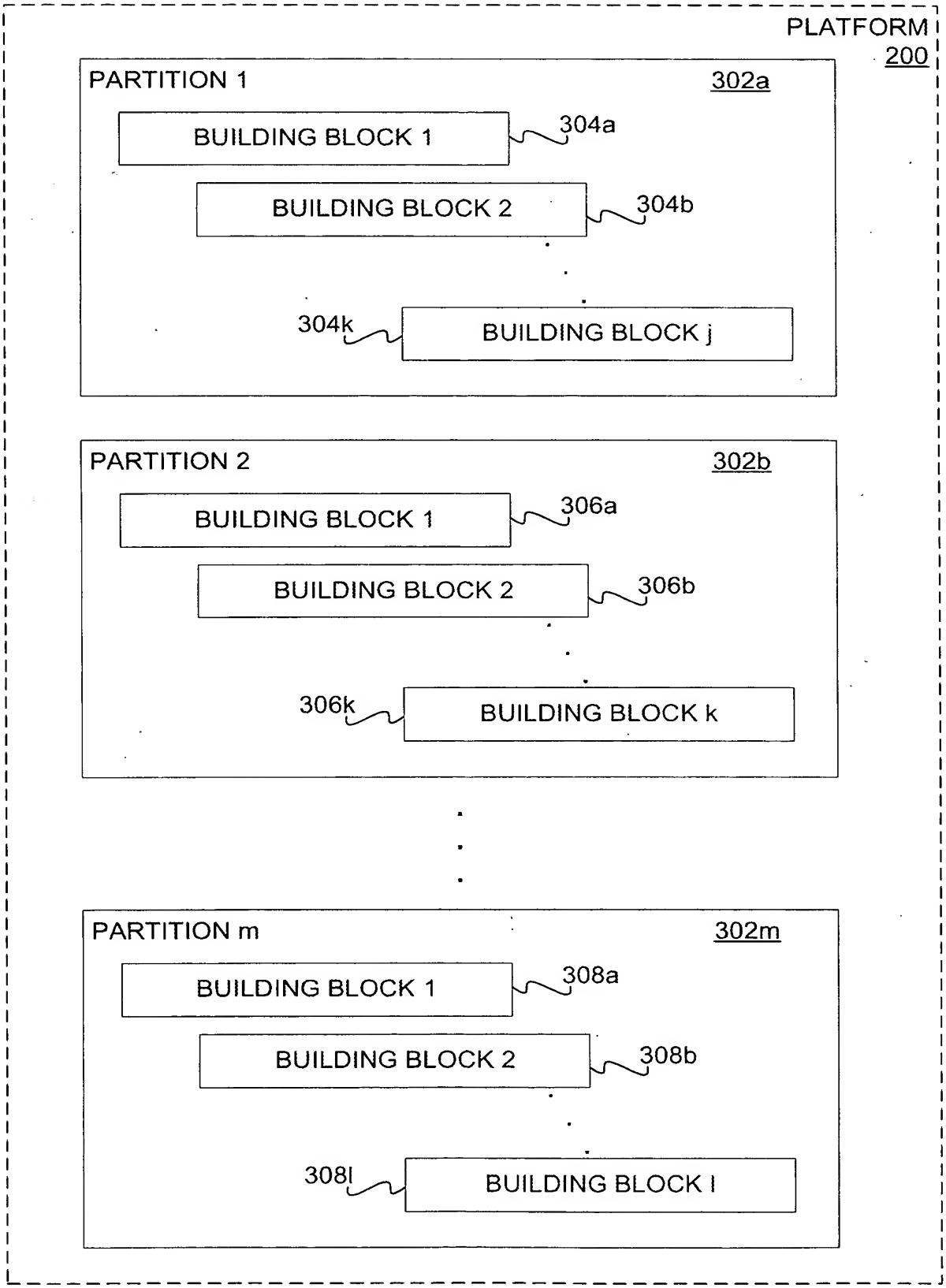

PLATFORM
200
PARTITION 1
302a
BUILDING BLOCK 1
304a
BUILDING BLOCK 2
304b
304k
BUILDING BLOCK j
PARTITION 2
302b
BUILDING BLOCK 1
306a
BUILDING BLOCK 2
306b
306k
BUILDING BLOCK k
PARTITION m
302m
BUILDING BLOCK 1
308a
BUILDING BLOCK 2
308b
308l
BUILDING BLOCK l

FIG 4

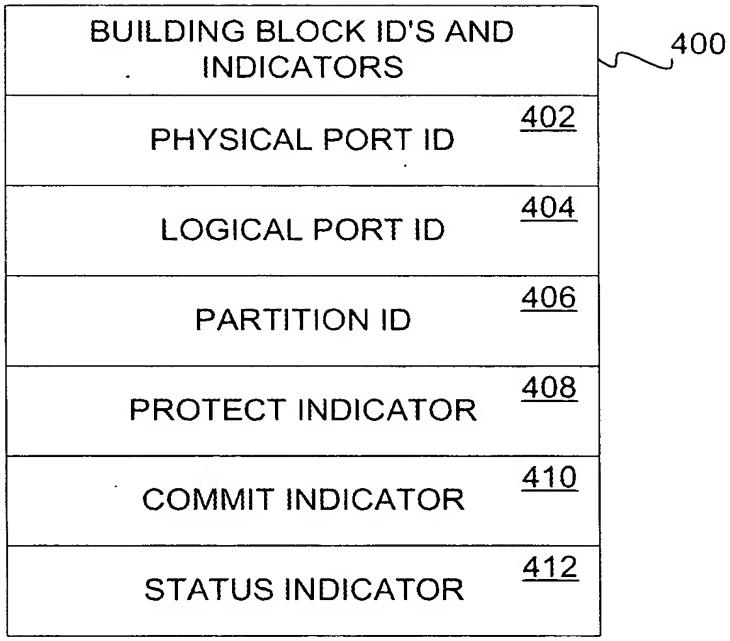

BUILDING BLOCK ID'S AND INDICATORS
400
PHYSICAL PORT ID
402
LOGICAL PORT ID
404
PARTITION ID
406
PROTECT INDICATOR
408
COMMIT INDICATOR
410
STATUS INDICATOR
412

FIG 5A

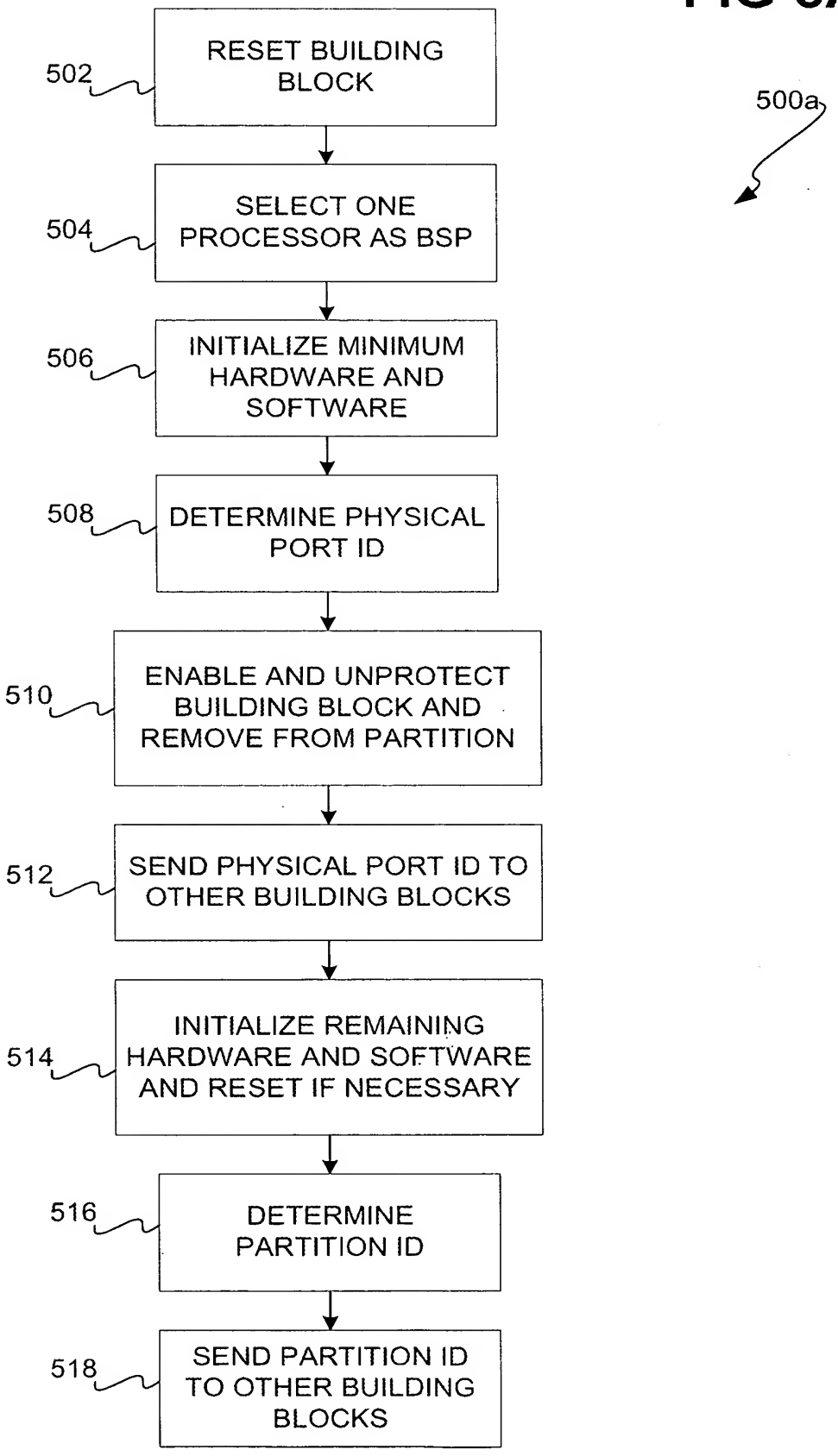

500a
502
RESET BUILDING BLOCK
504
SELECT ONE PROCESSOR AS BSP
506
INITIALIZE MINIMUM HARDWARE AND SOFTWARE
508
DETERMINE PHYSICAL PORT ID
510
ENABLE AND UNPROTECT BUILDING BLOCK AND REMOVE FROM PARTITION
512
SEND PHYSICAL PORT ID TO OTHER BUILDING BLOCKS
514
INITIALIZE REMAINING HARDWARE AND SOFTWARE AND RESET IF NECESSARY
516
DETERMINE PARTITION ID
518
SEND PARTITION ID TO OTHER BUILDING BLOCKS

FIG 5B

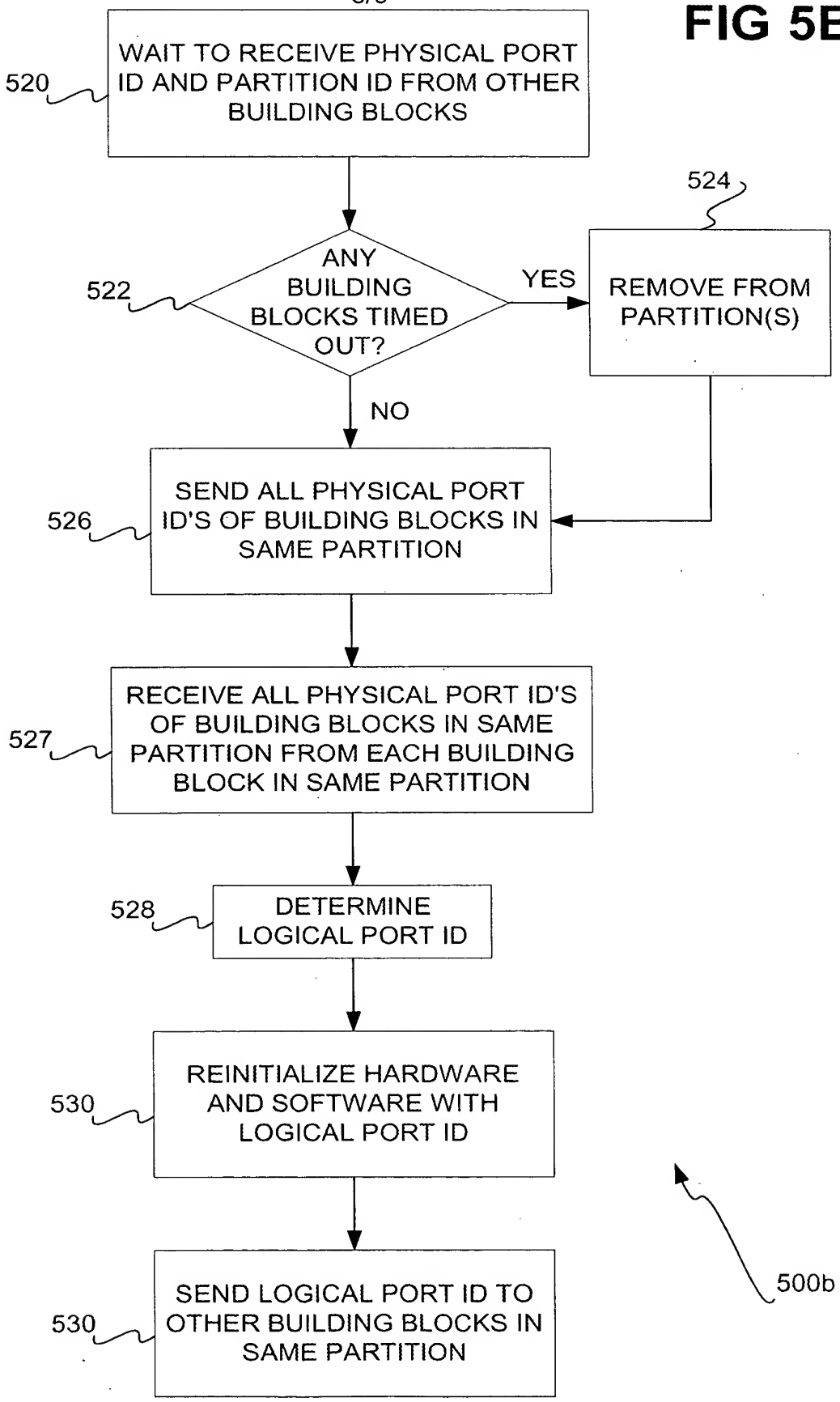

WAIT TO RECEIVE PHYSICAL PORT ID AND PARTITION ID FROM OTHER BUILDING BLOCKS
520
ANY BUILDING BLOCKS TIMED OUT?
522
YES
524
REMOVE FROM PARTITION(S)
NO
SEND ALL PHYSICAL PORT ID'S OF BUILDING BLOCKS IN SAME PARTITION
526
RECEIVE ALL PHYSICAL PORT ID'S OF BUILDING BLOCKS IN SAME PARTITION FROM EACH BUILDING BLOCK IN SAME PARTITION
527
DETERMINE LOGICAL PORT ID
528
REINITIALIZE HARDWARE AND SOFTWARE WITH LOGICAL PORT ID
530
SEND LOGICAL PORT ID TO OTHER BUILDING BLOCKS IN SAME PARTITION
530
500b

FIG 5C

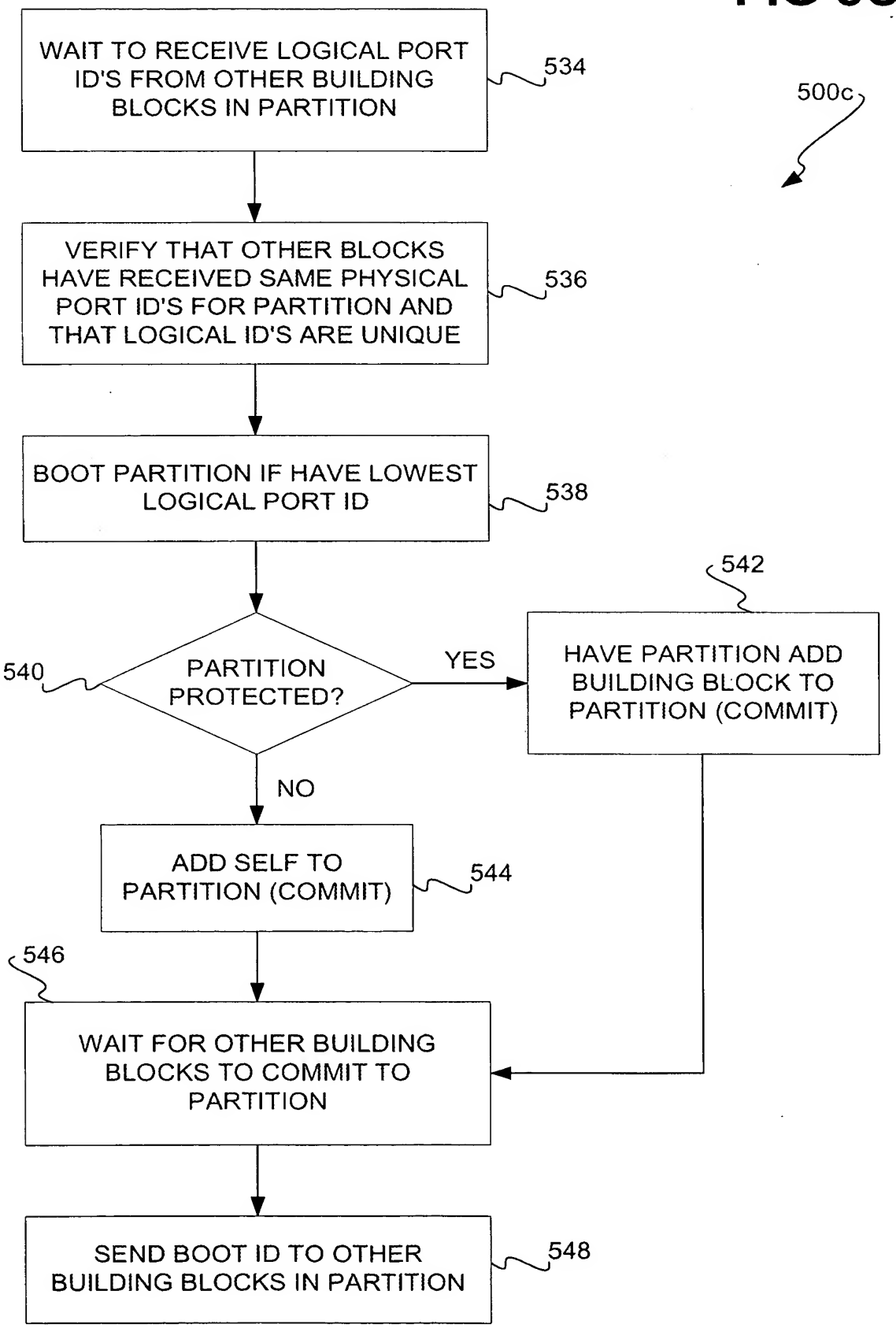

WAIT TO RECEIVE LOGICAL PORT ID'S FROM OTHER BUILDING BLOCKS IN PARTITION
534
500c
VERIFY THAT OTHER BLOCKS HAVE RECEIVED SAME PHYSICAL PORT ID'S FOR PARTITION AND THAT LOGICAL ID'S ARE UNIQUE
536
BOOT PARTITION IF HAVE LOWEST LOGICAL PORT ID
538
542
540
PARTITION PROTECTED?
YES
HAVE PARTITION ADD BUILDING BLOCK TO PARTITION (COMMIT)
NO
ADD SELF TO PARTITION (COMMIT)
544
546
WAIT FOR OTHER BUILDING BLOCKS TO COMMIT TO PARTITION
SEND BOOT ID TO OTHER BUILDING BLOCKS IN PARTITION
548

FIG 5D

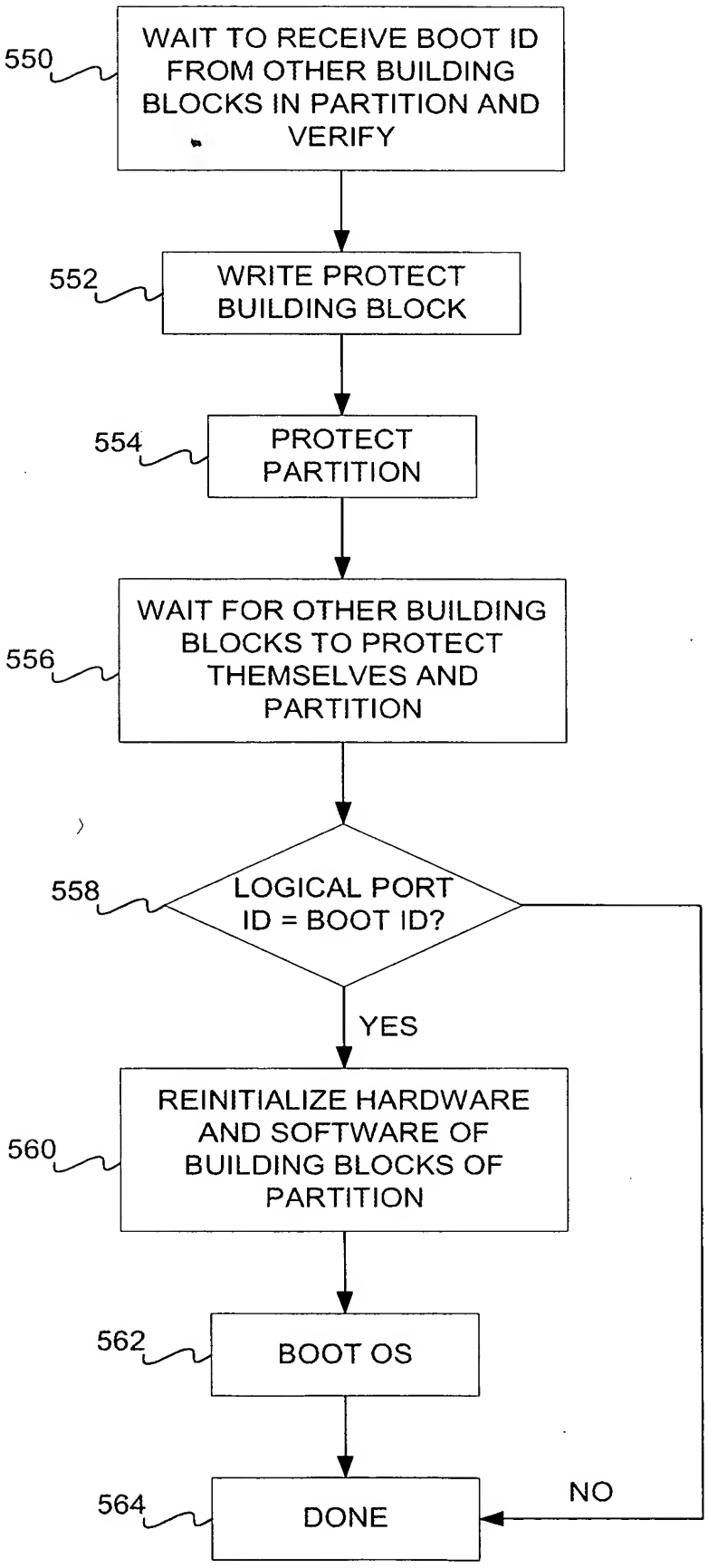
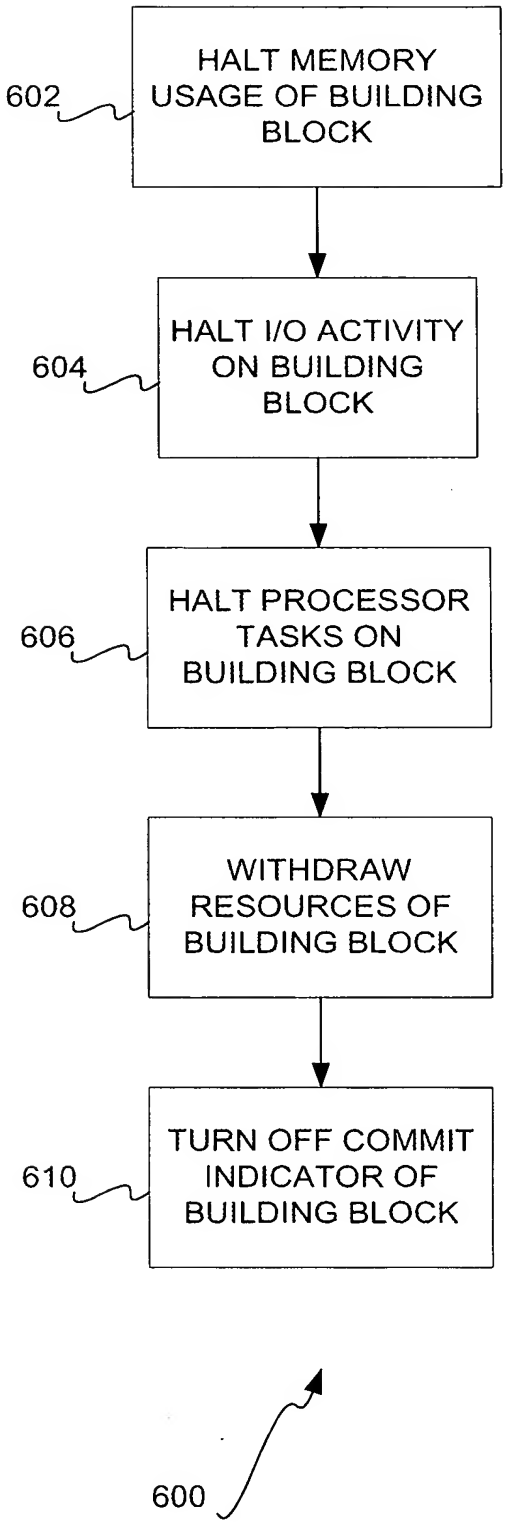

550
WAIT TO RECEIVE BOOT ID FROM OTHER BUILDING BLOCKS IN PARTITION AND VERIFY
552
WRITE PROTECT BUILDING BLOCK
554
PROTECT PARTITION
556
WAIT FOR OTHER BUILDING BLOCKS TO PROTECT THEMSELVES AND PARTITION
558
LOGICAL PORT ID = BOOT ID?
YES
NO
560
REINITIALIZE HARDWARE AND SOFTWARE OF BUILDING BLOCKS OF PARTITION
562
BOOT OS
564
DONE

FIG 6


HALT MEMORY USAGE OF BUILDING BLOCK
602
HALT I/O ACTIVITY ON BUILDING BLOCK
604
HALT PROCESSOR TASKS ON BUILDING BLOCK
606
WITHDRAW RESOURCES OF BUILDING BLOCK
608
TURN OFF COMMIT INDICATOR OF BUILDING BLOCK
610
600